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**(54) Title: PLANT LIMIT DEXTRINASE INHIBITOR**

**(57) Abstract:** The invention provides a method of producing plants with altered number, size or composition of starch granules, including starch granules having a more uniform size or altered starch structure, the method comprising introducing into a plant a nucleotide sequence comprising a limit dextrinase inhibitor gene, or a fragment or variant, or sequence homologous to the gene sequence provided. Also provided are a nucleotide sequence and protein of the limit dextrinase inhibitor gene, and plant and plant parts produced by the method of the invention. Modified starch is also provided.

	10	20	30	40	50
Hordeum vulgare	--MASD-HR	RFLVLSGAVIL SVLRAVATL B-----		SVKDECQJGLV	
Oryza sativa	--MASN-KV	VFSVILLAVV SVLATAATTAH YBHHQDQVVY		TGPGCLCQKGM	
Hordeum spontaneum	--MAFK-Y	QLLSSAAMVL AILAAVT-----		SGDNCAGKPA	
Kleusina coracana	--			SVGTCSCTG-----	
Secale cereale	--			SVGGCGVIGL-----	
Triticum durum	--MACKSSC	SLLLIAAVILL SVLAA-----A-----		SASGSCVPGV-----	
zea mays	--MASSSSSER	RLLILAAAVILL SVLAAASA-----		SAQTCSVGIV-----	
Triticum aestivum	--MASN-HR	RFLVLSGAVIL SVLRAVSA-L B-----		SVEDECQGV-----	
	60	70	80	90	100
Hordeum vulgare	DFFENPLATC	HTYVIKRVCVG -----RGPSRPM LV-----			KERC-----
Oryza sativa	GYMPNPLPHC	RALVHQRCVG -----RGPSRPM EQ-----			VRDCE-----
Hordeum spontaneum	ALPANPLIRAC	RTTVVSQCIC -----HGVPRLST MD-----			MKRC-----
Kleusina coracana	AIPENPLDSC	RWYVAKRAGC -----HGVPRLAT QR-----			MKARC-----
Secale cereale	AMPHENPLGC	RTTVVSQCIC -----HGVPRLPT MD-----			MKRC-----
Triticum durum	AFTNLNPLHC	RDYVLLQTCG TFTPGSKLPW HMTSASIYSP GKPYLAKIYC			LKRC-----
zea mays	AIPENPLPSC	RHYVTSRTOG -----IGPRLPW PE-----			
Triticum aestivum	AIPRNALATC	HTYVIKRVCVG -----RGPSRPM LV-----			KERC-----
	110	120	130	140	150
Hordeum vulgare	CRLAAVP-D	HCRCAEALRIL MDGVRTPE -----GRVVRG RLGDRDRDCPR			
Oryza sativa	CRLAAVP-DS	WCRCAEISHM LGGIYRHLG -----APDVGHF MSEBVFRGCR			
Hordeum spontaneum	CDELSAIP-A	YCRCAEALRII MDGTVTTQ-----GVFG-----YFKDMPCNCP			
Kleusina coracana	CROLAIP-A	YCRCAEAVRL MDGVVTP-----SQGEFG-----LQDLPGCP			
Secale cereale	CDRILAI-P	YCRCAEALRIL MDGVVTTQ-----GVFG-----YKLDMPNCP			
Triticum durum	CQEELAIS-Q	QCRCAEALRYF IALEPVPSQPV DPERSGNVRS GLIDLPGCP			
zea mays	CRLADIP-A	YCRCAEALTSIL MDGAIVPPG -----DAQLEG-----LLEDLPGCP			
Triticum aestivum	CRLAAVP-D	YCRCAEALRVL MDGVRAE-----GHVVEG RLGDRDRDCP			
	160	170	180	190	
Hordeum vulgare	EEQRFAATL	VTAAECNLSS VQAPGVRLVL LDAG-----			
Oryza sativa	GDLERSSAATL	PAFPCCNDIP GGG-GCYCML ARSGY-----			
Hordeum spontaneum	VNGTSSAANL	VNPQECNLWT LHGPSPCPL QPGYEVV-----			
Kleusina coracana	QVQRAFPLP	VTBVECNLPT IHGQPFCLSL LOAGE-----			
Secale cereale	VTRBSYATNL	VAPOECNLPT IHGSPYCPYL OAGY-----			
Triticum durum	SMQWDVFRL	VAPGQCNLWT IHNVRYCPCV BQPLWI-----			
zea mays	EVQRGPAFTL	VTBAAECNLNT IGGCVSTW1 LOGGTMPSK-----			
Triticum aestivum	BQDREFAATL	VTAAECNLPT VS--GVGSTL GATGNMKT LPK			



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